Information Sheet

Residential Fire Sprinkler Installations (February, 2015)

Contents and Purpose

This information sheet is intended to explain who can design, install, review, approve, and inspect residential fire sprinkler systems. It also differentiates between the different types of residential fire sprinkler systems and the applicable standards for installation.

Types of Residential Sprinkler Systems

There are basically two types of residential fire sprinkler systems:

- Stand-alone fire sprinkler systems.
- Multi-purpose fire sprinkler systems (also known as network, combination, or multi-purpose potable water piping systems).

Stand-Alone vs. Multi-Purpose Fire Sprinkler Systems

Stand-alone fire sprinkler systems are separate from domestic plumbing systems; there is often a “tee” separating the domestic plumbing system and the fire sprinkler system. Stand-alone fire sprinkler systems resemble commercial fire sprinkler systems. They are typically separated from the domestic plumbing system by some sort of a back-flow device – such as a single check valve.

Multi-purpose sprinkler systems use the same piping to supply domestic plumbing fixtures and fire sprinklers. Since they use the same piping to supply both domestic plumbing fixtures and fire sprinklers, no back-flow device is provided

Who Can Install?

Stand-alone fire sprinkler systems are required to be installed by licensed fire protection contractors.

Since multi-purpose fire sprinkler systems also supply domestic plumbing fixtures, these systems are required to be installed by licensed plumbers.

Minnesota Statutes, section 299M.03, subdivisions 1a and 3, also require a separate “multi-purpose potable water piping system contractor” license and “multi-purpose potable water piping system installer” certificate. At this time, the rules for this licensure and certification have not been developed.

Until the final rules are developed and legally adopted, the Minnesota State Fire Marshal will allow licensed plumbers to install multi-purpose systems when they have been trained by the multi-purpose system manufacturer.

Residential Sprinkler Installation Standards

There are two legally adopted installation standards: NFPA 13D (2010 edition) and Section P2904 of the Minnesota Residential Code (2015 edition). The installer has the option of using either of these two standards. Once the standard is selected, it must be used in its entirety (contractors must not "mix and match" provisions from both standards).

Proper sprinkler system performance is primarily dependent on two factors: the amount of pressure and an adequate volume of water (e.g. flow). The two standards (NFPA 13D or P2904) have different "design" approaches to providing water pressure and flow. Historically, hydraulic calculations have been performed to determine that there is adequate flow and pressure.

P2904 has a "prescriptive" pipe sizing method where the pipe size is determined by the prescribed sprinkler flow rate and pressure required based on the length of pipe installed. P2904 does not require the typical hydraulic calculation design and instead relies on this "prescriptive" method. Since this prescriptive method is not considered "design" by the State Fire Marshal, it does not require compliance with the design requirements of Minnesota Statute, Section 299M.03, subdivision 1a.

Residential sprinkler systems using hydraulic calculations are considered "design" by the State Fire Marshal; as such, Minnesota Statutes, Section 299M.03, subdivision 1a, would apply and the design would need to be performed by a licensed fire protection contractor.

Who Can Review / Inspect These Residential Sprinkler Systems

For stand-alone residential fire sprinkler systems, the design and installation will be reviewed in the same manner as commercial fire sprinkler systems (either the State Fire Marshal or a local code official when so designated to perform reviews and inspections). The State Fire Marshal's website contains a list of municipalities that have been delegated authority for fire sprinkler plan review and inspection authority.

For multi-purpose residential fire sprinkler systems utilizing a prescriptive method per P2904, the review and inspections will be performed by the applicable local code official. Depending on the municipality, that person may be the local building, plumbing, mechanical, or fire code official. The local code official can require that plans be submitted, if they so choose.

For additional questions about residential fire sprinkler installation, licensing, review, or inspections, please feel free to contact the State Fire Marshal at 651-201-7200 or e-mail us at fire.sprinklers@state.mn.us.